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Inflammation of palatine tonsils: Characterization of T cells function

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Statement of the Problem: Inflammation of the palatine tonsils, an easily accessible secondary lymphoid tissue, is one of the most common diseases in otolaryngology. In context of chronic tonsillitis (CT) and peritonsillar abscess (PTA) the functionality of tonsillar immune cells, notably T cells, is poorly understood.

Methodology & Theoretical Orientation: Patients presenting with CT (n=10) or unilateral PTA (n=7) underwent bilateral tonsillectomy. T cells were purified via automated magnetic selection and were identified by using flow cytometry-based immunophenotyping. In addition, cytokine release for IFNγ, TNF and IL2 was measured.

Findings: Tonsils from CT harbored more regulatory T cells, CD69(+) T cells, PD-1(+) CD4(+) T cells, pointing to T cell exhaustion due to chronic infection. After T cell receptor stimulation, the concentration of released cytokines increased. Higher concentration in tonsil tissue of peritonsillar abscess was measured for TNF und IL2.

Conclusion & Significance: Our study documents differences in tonsillar T cell function between CT and PTA by eliciting specific immunological responses in chronic versus acute settings of inflammation.

Biography

Katharina Geissler works as ENT Doctor at the ENT Department of the Jena University Hospital and has her expertise in analysis of T cell function in human palatine tonsil and other clinical aspects of chronic tonsillitis and tonsillectomy like pain therapy after tonsillectomy. Actually she works on organ models of nasopharyngeal and palatine tonsils.

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